

We Claim:

1. A method for a sublimation growth of at least one SiC single crystal, which comprise the steps of:

introducing a stock of solid SiC into a storage area of a crucible;

introducing at least one SiC seed crystal into at least one crystal area of the crucible;

bringing the crucible to growth conditions during a starting phase;

initially evacuating the crucible, and then filling the crucible with an inert gas, until a growth pressure is reached in the crucible, during the starting phase;

during the starting phase, initially heating the crucible to an intermediate temperature and then, in a heat-up phase, starting from the intermediate temperature, heating the crucible to a growth temperature at a heating rate of at most 20° C/min; and

growing the SiC single crystal, during a growth phase, by the stock of solid SiC being at least partially sublimed and converted into an SiC gas phase with SiC gas-phase components

and the SiC gas-phase components being at least partially transported to the SiC seed crystal, where the SiC gas-phase components are deposited for growing the SiC single crystal.

2. The method according to claim 1, which comprises during the starting phase, a minimum concentration of the SiC gas-phase components, above which crystal growth on the SiC seed crystal begins, is established in the SiC gas phase prevailing at the SiC seed crystal.

3. The method according to claim 1, which comprises during the heat-up phase, a temperature gradient of at most 20°C/cm is established between the storage area and the SiC seed crystal.

4. The method according to claim 1, which comprises starting from an initial level, the heat-up rate during the heat-up phase is reduced to a level of at most 10°C/min .

5. The method according to claim 4, which comprises during the heat-up phase the heat-up rate is reduced in steps starting from the initial level.

6. The method according to claim 1, which comprises filling the crucible, after the evacuating step, with at least one

inert gas selected from the group consisting of argon, helium and hydrogen.

7. The method according to claim 1, which comprises setting the growth pressure to a value of between 1 and 20 mbar.

8. The method according to claim 1, which comprises setting the growth temperature to a value of between 2100° C and 2300° C.

9. The method according to claim 1, which comprises during the starting phase the crucible is heated to the intermediate temperature of between 1000° C and 1400° C.